

LISTING OF THE CLAIMS

1. (Currently Amended) An apparatus for creating a molecular array comprising:
a base;
a Z controller operably connected to the base wherein the Z controller is selectively positionable along a Z axis;
a deposition probe removably and operably connected to the Z controller so that the deposition probe is selectively positionable along the Z axis by the Z controller;
an X, Y controller operably connected to the base wherein the X, Y controller is selectively positionable along an X axis and a Y axis, the X, Y controller further comprising a deposition substrate operably attached thereto and wherein the movement of the X, Y controller moves the deposition substrate between a first position and a second position, the second position being ~~operably positioned relative to~~ located under the deposition probe;
and
an X, Y translation stage operably connected to the base wherein the X, Y translation stage is selectively positionable along an X axis and a Y axis, the X, Y translation stage further comprising a loading substrate operably attached thereto and wherein the movement of the X, Y translation stage moves the loading substrate between a first position and a second position, the second position being ~~operably located relative to~~ under the deposition probe.
2. (Original) The apparatus of claim 1 further comprising a control computer.
3. (Original) The apparatus of claim 2 further comprising a humidity controller operably attached to the base wherein the humidity controller controls the humidity around the deposition probe.
4. (Original) The apparatus of claim 3 wherein the humidity controller is operably connected to the control computer.
5. (Original) The apparatus of claim 1 wherein the Z controller has an approximately 200 nanometer spatial resolution along the Z axis.

6. (Original) The apparatus of claim 5 wherein the X, Y controller has an approximately 20 nanometer spatial resolution along the X and Y axes.

7. (Original) The apparatus of claim 1 wherein the loading substrate further comprises one or more deposition materials deposited thereon.

8. (Original) The apparatus of claim 1 further comprising an optical microscope operably attached to the base.

9. (Original) The apparatus of claim 2 further comprising a force feedback monitor.

10. (Original) The apparatus of claim 2 wherein the deposition probe further includes a tip.

11. (Original) The apparatus of claim 10 further comprising a humidity controller, the humidity controller selectively controlling the humidity of the air around the tip.

12. (Original) The apparatus of claim 2 wherein the control computer further comprises a stepper motor control card.

13. (Original) The apparatus of claim 12 wherein the humidity controller further comprises a dry gas source, a humidity source, and a gas flow monitor.

14.-16. (Canceled)

17. (Currently Amended) An apparatus for creating an array comprising:
a Z controller;
a deposition probe operably attached to the Z controller, the deposition probe further comprising a tip;
an X, Y controller operably attached to the Z controller; and
a deposition substrate operably affixed to the X, Y controller where the deposition substrate is selectively movable between a first position and a second position and wherein when the X, Y controller moves the deposition substrate to the second position the deposition substrate is positioned ~~relative to~~ under the tip.

18. (Original) The apparatus of claim 17 further comprising:
a control computer operably connected to the Z controller and the X, Y controller;
a force feedback monitor operably affixed to the deposition probe and operably connected to the control computer; and
a humidity controller operably affixed to the Z controller and operably connected to the control computer.

19. (Currently Amended) The apparatus of claim ~~20~~ 17 further comprising an ozone source for cleaning the deposition probe.

20. (Canceled.)

21. (New) An apparatus for creating a molecular array on a deposition substrate comprising:

a base;

a deposition probe removably and operably connected to the base;

an X, Y translation stage operably connected to the base wherein the X, Y translation stage is selectively positionable along the X axis, and the Y axis, the X, Y translation stage further comprising a loading substrate operably attached thereto and wherein the movement of the X, Y translation stage moves the loading substrate between a first position and a second position, the second position being located under the deposition probe; and

an X, Y controller operably connected to the base wherein the X, Y controller is selectively positionable along the X axis, and the Y axis, the X, Y controller further comprising a deposition substrate operably attached thereto and wherein the movement of the X, Y controller moves the deposition substrate between a first position and a second position, the second position being located under the deposition probe.

22. (New) The apparatus of claim 21 further comprising a control computer.

23. (New) The apparatus of claim 22 further comprising a humidity controller operably attached to the base wherein the humidity controller controls the humidity around the deposition probe.

24. (New) The apparatus of claim 23 wherein the humidity controller is operably connected to the control computer.

25. (New) The apparatus of claim 21 wherein the X, Y, Z controller has an approximately 200 nanometer spatial resolution along the Z axis.

26. (New) The apparatus of claim 25 wherein the X, Y, Z controller has an approximately 20 nanometer spatial resolution along the X and Y axes.

27. (New) The apparatus of claim 21 wherein the loading substrate further comprises one or more deposition materials deposited thereon.

28. (New) The apparatus of claim 21 further comprising an optical microscope operably attached to the base.

29. (New) The apparatus of claim 22 further comprising a force feedback monitor.

30. (New) The apparatus of claim 22 wherein the deposition probe further includes a tip.

31. (New) The apparatus of claim 30 further comprising a humidity controller, the humidity controller selectively controlling the humidity of the air around the tip.

32. (New) The apparatus of claim 22 wherein the control computer further comprises a stepper motor control card.

33. (New) The apparatus of claim 32 wherein the humidity controller further comprises a dry gas source, a humidity source, and a gas flow monitor.

34. (New) An apparatus for creating an array on a substrate comprising:
a base;
a deposition probe operably attached to the base, the deposition probe further comprising a tip;
an X, Y translation stage operably attached to the base;
a loading substrate operably affixed to the X, Y translation stage where the loading substrate is selectively movable into an operable position under the deposition probe;
an X, Y controller operably attached to the base;
a deposition substrate operably affixed to the X, Y controller where the deposition substrate is selectively movable into an operable position under the deposition probe; and
a humidity controller, the humidity controller selectively adjusting the humidity around the deposition probe, the X, Y translation stage, and the X, Y controller.